Precision Rated Optics

Work with a PRO!

PRO-790

Fusion Splicer

Operation Guide

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1. Introductions

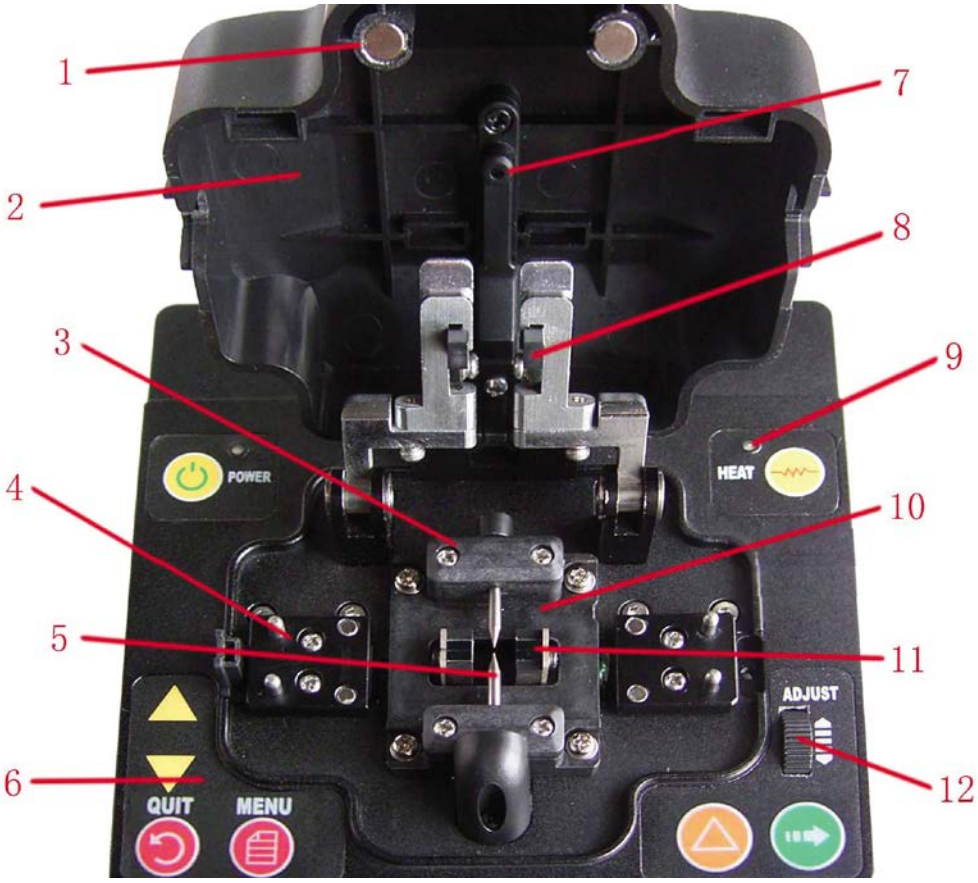
It is a light weight, small and fast FTTH Fusion Splicer, which is designed to splice bare fiber, pigtail, patch cord, Optical fiber drop cable and make of SC,FC, LC connector on the spot by changing different fiber holders equipped. It is an ideal tool for the splicing of fiber network terminal, which is able to work in narrow and small room.

Specifications

Applicable Fibers	SM, MM, DS, NZ-DS (G655), G655, G657
Fiber Diameter	Cladding Diameter: 80 -150μm; Coating Diameter: 100~1,000μm
Average Splice Loss	0.01db (MM), 0.02db (SM), 0.05db (DS/NZDS/G.655/G.657)
Return Loss	60dB
Tension Test	2.0N (Standard)
Splice Time	8 Seconds
Sleeve Lengths	25mm, 40mm, 50mm
Sleeve Heating Time	35 Sec.
Splicing Programs	Manual and Automatic Settings
Alignment	PAS Technology
Fiber Holder (Bare Fiber)	250μm ~ 900μm, Pigtails, Patch Cords or Optical Fiber Drop Cables
Monitor	3.5” Color LCD
Interface	USB
Languages	English, Spanish, Chinese
Data Storage	10,000 Splice Results
Electrode Lifespan	5,000 Splicing Operations
Operating Temperature	-0.4º F ~ 122º F (-18º C ~ 50º C)
Storage Temperature	-40º F ~ 176º F (-40º C ~ 80º C)
Power Supply	Internal Li-Ion Battery, AC/DC Adaptor (12v) Battery Capacity: Approximately 120 Splices and Oven Uses
Environmental Conditions	0 ~ 95% (Humidity), 0 ~ 5000m (Altitude), 15mph (Max. Wind Velocity)
Weight & Dimensions (LxWxH)	4.7” x 4.7” x 4.5” / 3.75 lb (120 x 120 x 115 mm / 1.7 kg)
Warranty	Standard 1-Year Manufacturer Warranty (Extended Warranty Available)

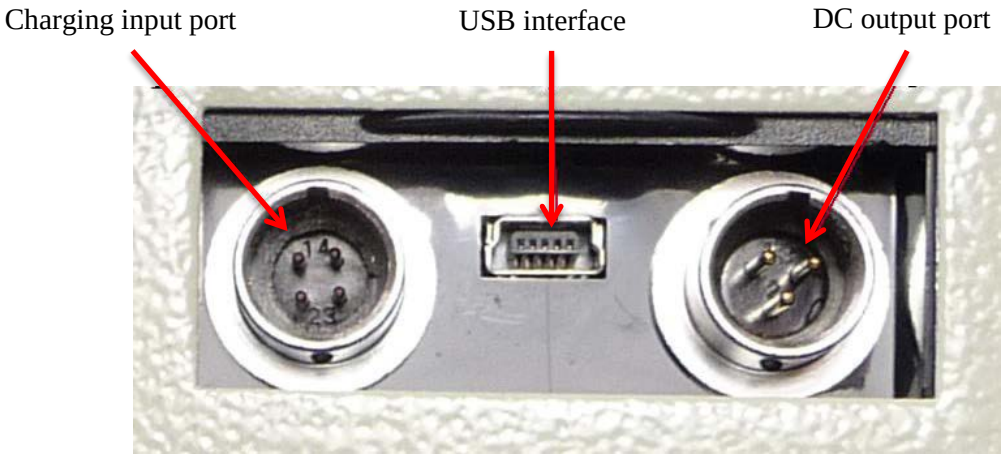
2. Description of Operation Units

Panel and Wind Protector



1: Wind Protector Magnet	7: light
2: Wind Protector	8: Fiber Presser
3: Electrode Cover Plate	9: Heating indicator light
4: Holder Base	10: Electrode Base
5: Electrode	11: V-Groove
6: Key Board	12: Alignment wheel

Description of side outlet box

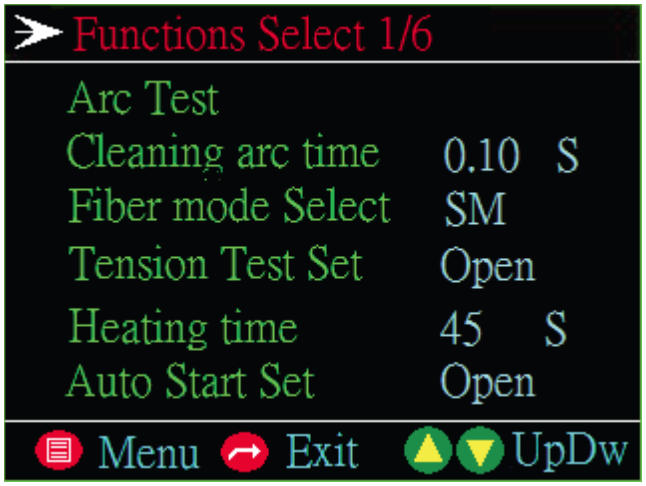


Kaypad

	Menu/Confirm
	Exit/Return
	Up Down/Modify
	Splice/Re-arc
	Heating
	Reset
	Switch

3. Description of Software Menu

There are 6 pages of the software menu: function selection, parameter set, maintenance set, record check and operation guide, description of subpage is as follows:



Arc Test:

By doing Arc Test, it will judge whether the current arc power is suitable for the fiber and environment or not. Prepare fiber, place the fiber in the V-groove, choose arc test and then enter arc test program, and there will be a report after the arc test finished. If it shows arc strong or arc weak, the machine will automatically adjust arc power to make the following arc test to be arc ok.

Performing Arc test is a very important method to keep the machine at a well working condition. Arc test has to be performed in the following situations to avoid bad splice:

- Replace of electrode
- Dramatic change of temperature, humidity and air pressure
- Different fibers to be spliced
- Several times use of Electrode
- Splicing db loss high without reason
- Distortion of fiber image after splicing

Cleaning arc time:

There is a transient arc for cleaning the fiber after fiber is pushed into the screen, it can be modified by this program.

Splicing mode select:

There are 7 modes can be selected: SM, MM50, MM62.5, DS, NZDS, ERBIUM, USER DEFINE, the specific parameter of the splicing parameter menu will be changed accordingly.

Tension Test set:

After open the wind protector, the machine will tension test or not based on this set.

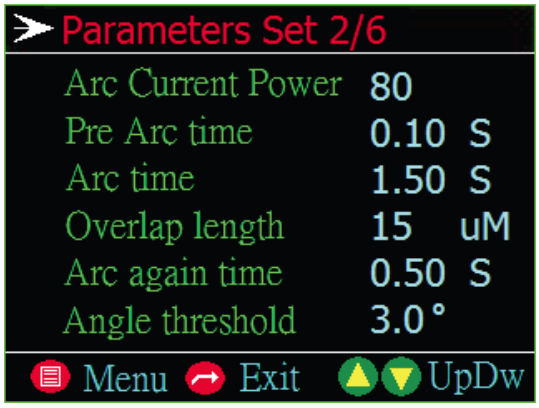
Heating time:

Heater will heat according to the time set after pressing the heat button. Pressing heating button during heating operation, it will stop heat.

Auto start set:

If this item is OPEN, after close the cover in stand by status, the machine will start splice automatically.

Parameter Set II


Parameters Set 2/6
Arc Current Power 80
Pre Arc time 0.10 S
Arc time 1.50 S
Overlap length 15 uM
Arc again time 0.50 S
Angle threshold 3.0 °
Menu Exit UpDw

Arc power:

This parameter has the function over cleaning arc, pre arc, splicing arc, arc again, it can be set from 10-100.

Pre arc time:

It is time between the start of arcing and start of forward.

Arc time:

It is the continuous arc time after forward.

Overlap length:

The forward length during arc process.

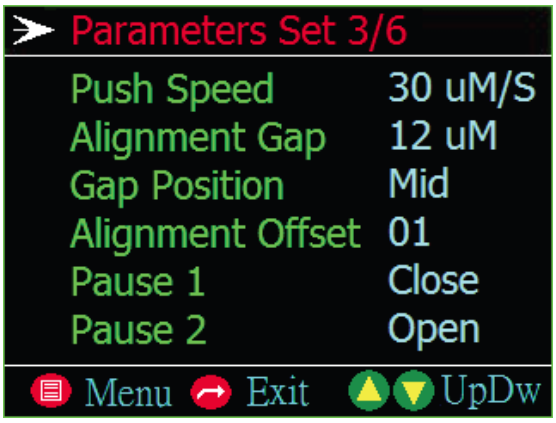
Arc again:

After splicing, pressing arc button, the machine will arc again.

Angle threshold:

During splicing process, if the fiber angle is greater than this parameter, PAUSE II will be automatically started (Even if PAUSE II is in off condition). Note: Changing arc power and arc time has an effect on arc test result.

Parameter Set III



Push speed:

It decides motor speed and reset speed.

Alignment gap:

The distance between the end face of left and right fiber after aligned.

Gap position:

The position of end face after fiber aligned, it is set in the mid of the screen usually. When the arc position is not in the mid of the screen (can be verified by the result of arc test), this parameter can be modified to make the gap position and arc position stay in same.

Alignment offset:

If the alignment offset is greater than this parameter, PAUSE II will be automatically started (Even if PAUSE II is in off position).

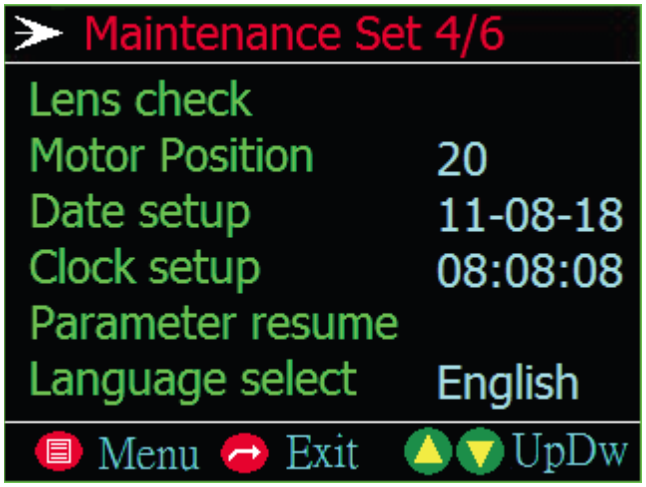
PAUSE I:

If this item is open, during the process of splicing and arc test, the fiber will stop after pushed into screen.

PAUSE II:

If this item is open, during the process of splicing and arc test, the fiber will stop after alignment.

Maintenance Set:



Lens check:

Check whether there is dust or saturation points in lens, by this check result, it can judge if the optical system of this machine suitable for splicing operation or not.

Motor resetting position:

The distance that motor left the initial position after switch on or resetting.

Day setup:

Set year, month and day.

Clock setup:

Set hour, minute and second.

Parameter resume:

Resume all parameters to default value.

Language:

Chinese or English.

Records check:

Arc times:

Arc times of electrode, including arc test, splicing arc, splicing again and manual splicing.

Arc times clear:

Recommend to do this operation after changing of electrode.

Heat times:

Working time of heater.

Heat times clear:

Recommend to do this operation after changing of heater.

Records view:

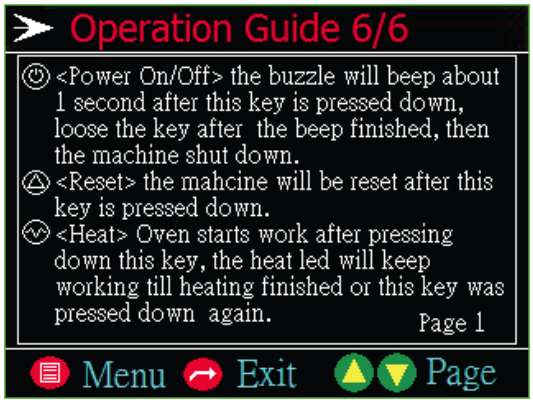
View the operation record of this machine, including splicing time and splicing result. If the splicing loss is 2.55, that means splicing failed.

Records clear:

Clear all splicing records, maximum records are 10000 (0000-9999).

Operation guide:

It is a simple operation guide, read by pressing page-turning key.


Operation Guide 6/6
<Power On/Off> the buzzle will beep about 1 second after this key is pressed down, loose the key after the beep finished, then the machine shut down.
<Reset> the mahcine will be reset after this key is pressed down.
<Heat> Oven starts work after pressing down this key, the heat led will keep working till heating finished or this key was pressed down again.
Page 1
Menu Exit Page

4. Switch on, switch off and stand by

Pressing switch will power on the machine

In standby, pressing switch continuously, machine will buzz, when buzzing stopped, still pressing the switch button, the machine will power off once loosing the switch button.

Stand by:

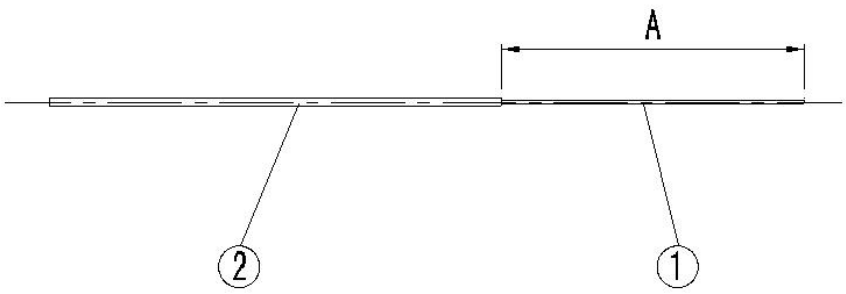
Stand by after power on, and it will show the current day, time and battery capacity and available operation button.

5. Basic procedure of splicing

1. Prepare fiber

250um fiber

Strip fiber coating by small slot of CFS-2 stripper, stripped length A is more than 18mm, see following Fig.

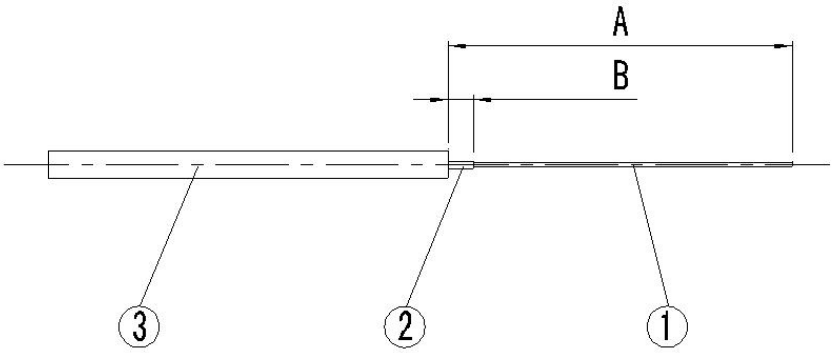


1. Cladding diameter 125um
2. Coating diameter 250um

A. Stripped part not less than 18mm

900um Fiber

Strip protecting jacket of pigtail by big slot of CFS-2 stripper, length A more than 20mm; Strip cladding of pigtail by small slot of CFS-2 Stripper, retain length B less than1 mm, see following Fig.

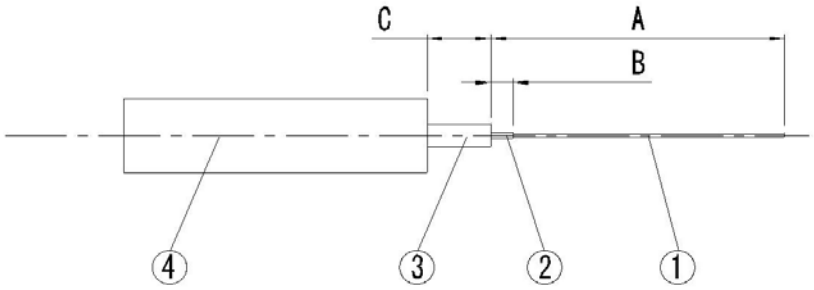


1. Cladding diameter 125um
2. Coating diameter 250um
3. Pigtail protecting jacket 900um

A. Stripped part not less than 18mm

B. Coating retain<1mm

Pigtail



1. Cladding diameter 125um
2. Coating diameter 250um
3. Pigtail jacket 900um
4. Patch cord jacket 3mm

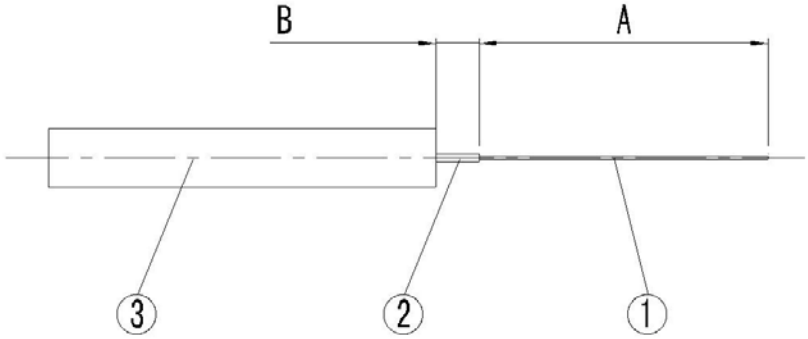
A. Stripped part not less than 18mm

B. Coating retain<1mm

C. Pigtail protecting jacket retain 3mm

Fiber optic drop cable

Strip jacket 22mm of fiber optic drop cable by professional striper, then strip fiber coating by small slot of CFS-2 Stripper, retain length B3mm, see following Fig

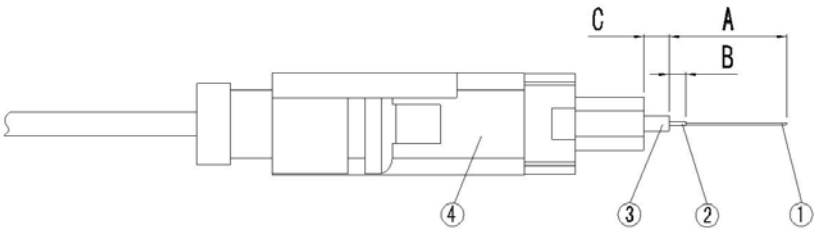


1. Cladding diameter 125um
2. Coating diameter 250um
3. Protecting jacket

A. Stripped part not less than 18mm

B. Coating retain 3mm

Pigtail Connector



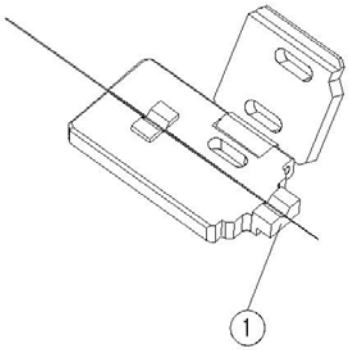
1. Cladding diameter 125um
2. Coating diameter 250um
3. Protecting jacket 900um
4. Connector plastic part

A. Stripped part not less than 18mm

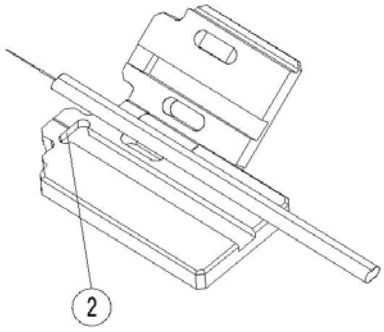
B. Coating retain<1mm

C. Fiber jacket retain1mm Clean fiber with 99% (or more) alcohol after fiber prepared

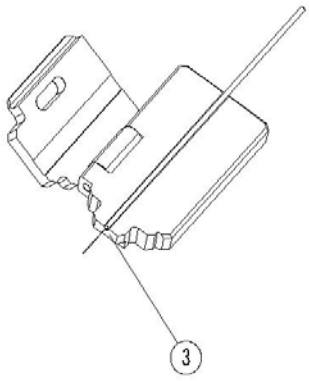
2. Place fiber in the relevant holder



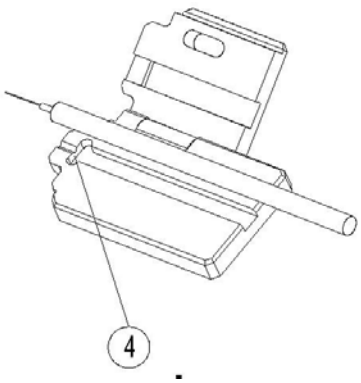
250 um fiber



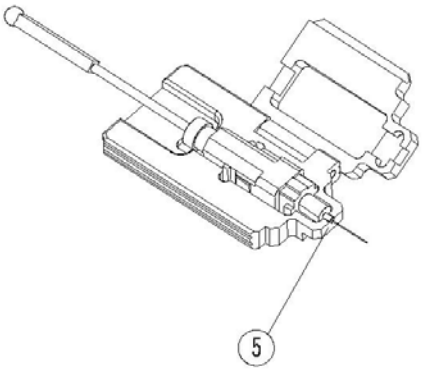
Drop cable



900um fiber



Pigtail



Pigtail connector

3. Fiber cutting

Place holder with fiber inside to the locating slot of PRO-790 fiber cleaver, pressing the holder to the direction of blade, cladding length retain 7.5mm after cutting.

4. Place fiber

After fiber cutting, continue the following operations.

1) Open wind protector, uplift fiber presser foot.
2) Place the holder with fiber in side to the holder base, make sure fiber is in V-groove.
3) Put down fiber presser foot softly, and close wind protector.
4) Press splicing button(If necessary)

5. Heating operation

1) Open wind protector, take out spliced fiber.
2) Press reset button for next splicing(If necessary)
3) Move the protection sleeve to cover the splicing point
4) Put fiber in heater
5) Press heating button
6) Splicing and heating finish

6. Charging of Machine

The fusion splicer is equipped with the dedicated charger, other chargers are not allowed. It can be charged when power on or power off Red indicator light mean fusion splicer is under charging, green mean charge fully.

7. Standard package and optional

Pro-790 kit includes: Fiber Cleaver, Fiber optic drop cable stripper, Stripper, Fiber Holders, Electrodes, Coo;ing Tray, Charger, User Manual, External Light (Optional).

9. Safety operation Norms

1) Prohibiting to using fusion splicer in the environment with inflammable explosive liquid or gas, otherwise electrode arc may cause fire or explosion.
2) Do not operate machine if there are moisture condense on the machine, otherwise the machine will be damaged.
3) Avoid strong shock or crash, because the mechanical components were precisely adjusted and aligned, otherwise damage will be caused, make sure use the equipped carton to store or transport the machine.

4) Do not use any other chemicals but alcohol to clean lens, V-Groove, holders, LCD monitor etc., otherwise it will cause blurred imaging, dirt, damage, corrosion.

5) Do not touch electrode while fusion splicer is working, otherwise the high pressure and temperature generated by electrode will cause electric shock and burn. Switch off fusion splicer while changing electrodes.

6) Do not dismantle fusion splicer and charger.

7) Only use the equipped charger to charge battery, otherwise may cause damage to fusion splicer and operators.

8) Switch off fusion splicer, in case liquid (water) or other external stuff (screw) entered the machine, otherwise damage to the machine will be caused.

9) Take out fiber carefully after heating finished; do not touch the protection sleeve and heater, since the high temperature will cause burn.

10) Only electrodes supplied by manufacturer can be used.

11) Repair and adjustment can only be operated by the professional technician or engineer; improper repair may cause fir and electric shock.

10. Warnings and cautions for transportation

Avoid strong shock or crash, because fusion splicer is precision instrument and the mechanical components were precisely adjusted and aligned, otherwise damage will be caused, make sure use the equipped carton to store or transport the machine. Do not put fusion splicer in a unstable or unbalanced position, otherwise fusion splicer may be damaged in case the fusion splicer loose balance.

11. Periodical replacement of component

1) Replacement of electrode

- Power off fusion splicer
- Loss the two screws which fastening the cross-shaped slot
- Take out electrode cover and screws
- Take out electrode
- Change new electrodes, and put the end face of the plastic top of the electrode on the copper plate.
- Pressing electrode by electrode cover, tighten two screws, there should be a 0.1mm gap between electrode cover and copper plate once screwed, do not make over deformation of the electrode cover.
- Repeat 1~5 to change another electrode.

2) Replacement of heater

- Switch off fusion splicer, cooling heater to room temperature
- Open left and right plate
- Dismantle two M2.5 screws by allen wrench.
- Take off heater softly and pull off power plug
- Change a new heater, plug the power line
- Tightening heater to fusion splicer panel by two M2.5 screws

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